

Confidential Claim Retracted

Authorized by: SE

Date: 6/26/13

AIR QUALITY MONITORING PROGRAM

One 48-hour sample is taken each month at each of the four locations specified by Marc Nelson. They are collected about three meters above the ground on GF/A Glass Microfibre filter paper, using an RAC Heavy-duty Sampler.

AMBIENT RADON STUDY

One 48-hour sample is collected at each of the air sampling locations as specified by Marc Nelson. These samples are collected about one meter above the ground in 30-liter Tedlar bags, using a modified aquarium pump. The samples are transported to the Environmental Laboratory, transferred to a scintillation cell, and counted.



9404236

POL-EPA01-0005176

JACKPILE - WATER RADIOLOGICAL ANALYSIS

(SECOND QUARTER, 1980)

<u>DESCRIPTIVE LOCATION</u>	<u>Radium-226 pCi/L</u>			<u>Uranium-Natural ppm</u>		
	<u>April</u>	<u>May</u>	<u>June</u>	<u>April</u>	<u>May</u>	<u>June</u>
Rio Paguate Upstream	0.50	0.56	0.12	0.001	0.007	0.001
Rio Moquino Upstream	0.48	0.95	0.54	0.002	0.006	0.009
Rio Paguate Above the Confluence	2.08	6.21	2.27	0.007	0.023	0.019
Rio Moquino Above the Confluence	0.51	2.14	0.43	0.039	0.015	0.019
Rio Paguate Ford Crossing	2.00	6.88	3.29	0.047	0.076	0.082
Paguate Reservoir	0.68	1.20	0.53	0.071	0.249	0.189
Jackpile Well #4	0.16	0.83	0.41	0.007	0.005	0.003
Jackpile New Shop	3.00	2.47	3.07	0.001	0.008	0.006
Jackpile Old Shop	1.71	0.87	0.94	0.094	0.031	0.082

DATE: April, 1980.

DESCRIPTIVE LOCATION	DATE	pH	TDS ppm	Cond umhos	HCO <sub>3</sub> <sup>-</sup> ppm	Cl <sup>-</sup> ppm	SO <sub>4</sub> <sup>=</sup> ppm	Na <sup>+</sup> ppm	K <sup>+</sup> ppm	Ca <sup>++</sup> ppm	Mg <sup>++</sup> ppm	NO <sub>3</sub> <sup>-</sup> ppm	F <sup>-</sup> ppm	SiO <sub>2</sub> ppm	Mn <sup>++</sup> ppm
Rio Paguate Upstream	4-2-80	8.4	374	630	285	10	79	19	7	65	25	< 1	0.35	27	< 0.10
Rio Nequino Upstream	4-2-80	8.2	1096	1600	259	13	600	118	18	122	76	< 1	0.50	20	< 0.10
Rio Paguate Above the Confluence	4-2-80	8.2	397	720	284	11	97	24	8	62	27	< 1	0.38	26	< 0.10
Rio Nequino Above the Confluence	4-2-80	8.2	1271	1800	279	15	730	122	22	134	90	< 1	0.55	19	< 0.10
Rio Paguate Ford Crossing	4-2-80	8.2	1026	1500	286	14	548	100	19	105	75	< 1	0.52	22	< 0.10
Paguate Reservoir	4-2-80	8.2	1741	2350	263	29	1069	160	40	170	128	< 1	0.65	14	< 0.10
Jackpile #4	4-2-80	8.6	800	1400	325	21	324	276	6	3	1	< 1	1.15	7	< 0.10
Jackpile New Shop	4-2-80	8.3	1322	2200	398	31	671	520	16	15	2	< 1	1.28	17	< 0.10
Jackpile Old Shop	4-2-80	8.1	1613	2350	329	42	849	384	20	77	64	< 6	1.12	8	< 0.10
		As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm	
Rio Paguate Upstream	4-2-80	< 0.005	0.09	< 0.001	< 0.005	0.02	< .0005	< 0.005	0.002	< 0.10	0.003	< 0.01	< 0.005	< 0.05	
Rio Nequino Upstream	4-2-80	< 0.005	0.07	< 0.001	< 0.005	0.04	< .0005	< 0.005	0.004	< 0.10	0.015	< 0.01	< 0.005	< 0.05	
Rio Paguate Above the Confluence	4-2-80	< 0.005	0.12	< 0.001	< 0.005	0.02	< .0005	< 0.005	0.002	< 0.10	0.006	< 0.01	< 0.005	< 0.05	
Rio Nequino Above the Confluence	4-2-80	< 0.005	0.09	< 0.001	< 0.005	0.03	< .0005	< 0.005	0.002	< 0.10	0.006	< 0.01	< 0.005	< 0.05	
Rio Paguate Ford Crossing	4-2-80	< 0.005	0.10	< 0.001	< 0.005	0.03	< .0005	< 0.005	0.005	< 0.10	0.008	< 0.01	< 0.005	< 0.05	
Paguate Reservoir	4-2-80	< 0.005	0.05	< 0.001	< 0.005	0.04	< .0005	< 0.005	0.008	< 0.10	0.015	< 0.01	< 0.005	< 0.05	
Jackpile #4	4-2-80	< 0.005	0.05	< 0.001	< 0.005	0.01	< .0005	< 0.005	0.004	< 0.10	0.009	< 0.01	< 0.005	< 0.05	
Jackpile New Shop	4-2-80	< 0.005	0.06	< 0.001	< 0.005	0.01	< .0005	< 0.005	0.004	< 0.20	0.093	< 0.01	< 0.005	< 0.05	
Jackpile Old Shop	4-2-80	< 0.005	0.05	< 0.001	< 0.005	0.02	< .0005	0.15	0.005	< 0.10	0.18	< 0.01	< 0.005	< 0.05	

DESCRIPTIVE LOCATION	DATE	pH	TDS ppm	Cond umhos	HCO <sub>3</sub> <sup>-</sup> ppm	Cl <sup>-</sup> ppm	SO <sub>4</sub> <sup>=</sup> ppm	Na <sup>+</sup> ppm	K <sup>+</sup> ppm	Ca <sup>++</sup> ppm	Mg <sup>++</sup> ppm	NO <sub>3</sub> <sup>-</sup> ppm	F <sup>-</sup> ppm	SiO <sub>2</sub> ppm	Mn <sup>++</sup> ppm
Rio Paguato Upstream	5-5-80	8.2	407	760	320	11	79	31	5	84	35	< 1	0.40	3	< 0.10
Rio Moquino Upstream	5-5-80	8.1	1141	1700	245	15	662	125	12	124	75	< 1	0.58	6	< 0.10
Rio Paguato Above the Confluence	5-5-80	8.3	485	750	267	11	195	36	5	69	31	< 1	0.41	5	< 0.10
Rio Moquino Above the Confluence	5-5-80	8.3	1267	1950	245	15	736	151	14	130	91	< 1	0.58	8	< 0.10
Rio Paguato Ford Crossing	5-5-80	8.1	1186	1750	270	15	680	130	13	119	85	< 1	0.56	9	< 0.10
Paguato Reservoir	5-5-80	8.4	1921	2650	169	31	1222	270	29	142	132	< 1	0.64	10	< 0.10
Jackpile #4	5-5-80	8.6	921	1550	353	21	360	350	4	5	2	< 1	1.20	3	< 0.10
Jackpile New Shop	5-5-80	8.5	1537	2300	386	28	685	600	8	16	3	< 1	1.30	5	< 0.10
Jackpile Old Shop	5-5-80	8.4	1485	2200	337	35	764	420	9	48	35	< 1	1.20	6	< 0.10
			As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm
Rio Paguato Upstream	5-5-80	<	0.005	0.20	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.004	< 0.10	0.003	< 0.01	< .005	< 0.05
Rio Moquino Upstream	5-5-80	<	0.005	0.12	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.004	< 0.10	0.005	< 0.01	< .005	< 0.05
Rio Paguato Above the Confluence	5-5-80	<	0.005	0.12	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.004	< 0.10	0.005	< 0.01	< .005	< 0.05
Rio Moquino Above the Confluence	5-5-80	<	0.005	0.05	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.003	< 0.10	0.005	< 0.01	< .005	< 0.05
Rio Paguato Ford Crossing	5-5-80	<	0.005	0.12	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.004	< 0.10	0.005	< 0.01	< .005	< 0.05
Paguato Reservoir	5-5-80	<	0.005	0.12	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.003	< 0.10	0.004	< 0.01	< .005	< 0.05
Jackpile #4	5-5-80	<	0.005	0.08	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.003	< 0.10	0.059	< 0.01	0.006	< 0.05
Jackpile New Shop	5-5-80	<	0.005	0.08	< 0.001	< 0.005	< 0.01	< .0005	< 0.005	0.003	< 0.10	0.059	< 0.01	0.006	< 0.05
Jackpile Old Shop	5-5-80	<	0.005	0.08	< 0.001	< 0.005	< 0.01	< .0005	0.06	0.002	0.12	0.036	< 0.01	< .005	< 0.05



JACKPILE - WATER RADIOLOGICAL ANALYSIS  
(Forth Quarter, 1979)

DESCRIPTIVE LOCATION	RADIUM-226 pCi/l					URANIUM-NATURAL ppm				
	Oct.	Nov.	Dec.			Oct.	Nov.	Dec.		
Rio Paguate Upstream	0.52	0.33	0.46			0.003	0.003	0.007		
Rio Moquino Upstream	0.16	0.29	0.05			0.010	0.012	0.010		
Rio Paguate Above the Confluence	5.53	6.13	5.46			0.137	0.063	0.083		
Rio Moquino Above the Confluence	1.48	0.77	0.68			0.032	0.025	0.034		
Rio Paguate Ford Crossing	8.33	4.43	6.13			0.135	0.189	0.079		
Mouth of Oak Canyon Wash	NS	NS	NS			NS	NS	NS		
Paguate Reservoir	0.06	0.72	0.57			0.038	0.055	0.220		
Jackpile #4	0.33	0.72	0.63			0.006	0.001	0.006		
Jackpile New Shop	1.36	3.71	3.58			0.018	0.002	0.005		
Jackpile Old Shop	0.64	1.75	1.00			0.086	0.057	0.069		

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JACKPILE  
WATER CHEMICAL ANALYSIS

DATE: October, 1979

DESCRIPTIVE LOCATION	DATE	pH	TDS ppm	Cond umhos	HCO <sub>3</sub> <sup>-</sup> ppm	Cl <sup>-</sup> ppm	SO <sub>4</sub> <sup>==</sup> ppm	Na <sup>+</sup> ppm	K <sup>+</sup> ppm	Ca <sup>++</sup> ppm	Mg <sup>++</sup> ppm	NO <sub>3</sub> <sup>-</sup> ppm	F <sup>-</sup> ppm	SiO <sub>2</sub> ppm	Mn <sup>++</sup> ppm		
Rio Paguate (Upstream)	10/04/79	8.3	473	750	342	12	126	23	15	64	31	< 1	0.39	32	< 1		
Rio Moquino (Upstream)	10/04/79	8.2	1528	2100	239	19	1016	118	23	118	100	< 1	0.59	14	< 1		
Rio Paguate (Above the Confluence)	10/04/79	8.4	8.31	1400	198	16	467	60	19	72	76	< 1	0.48	22	< 1		
Rio Moquino (Above the Confluence)	10/04/79	8.3	1889	2600	264	21	1203	135	23	140	140	< 1	0.79	15	< 1		
Rio Paguate (Ford Crossing)	10/04/79	8.2	2080	2750	305	24	1363	155	25	140	153	< 1		18	< 1		
Paguate Reservoir	10/04/79	8.0	1844	2550	195	34	1265	130	33	169	111	< 1	1.79	4	< 1		
Jackpile #4	10/04/79	8.7	744	1400	355	20	326	202	6	3	1	< 1	1.30	9	< 1		
Jackpile New Shop	10/04/79	8.3	1274	2100	395	28	660	349	11	12	1	< 1	1.25	17	< 1		
Jackpile Old Shop	10/04/79	8.2	1397	2250	327	36	836	230	14	60	44	6	1.32	9	< 1		
			As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm		
Rio Paguate (Upstream)	10/04/79	0.009	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	< 0.01	0.002	< 1	0.003	< 0.01	< 0.005	< 0.05			
Rio Moquino (Upstream)	10/04/79	0.007	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	< 0.01	0.002	< 1	0.013	< 0.01	< 0.005	< 0.05			
Rio Paguate (Above the Confluence)	10/04/79	0.008	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	< 0.01	0.019	< 1	0.006	< 0.01	< 0.005	< 0.05			
Rio Moquino (Above the Confluence)	10/04/79	0.006	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	< 0.01	0.002	< 1	0.002	< 0.01	< 0.005	< 0.05			
Rio Paguate (Ford Crossing)	10/04/79	0.007	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	< 0.01	0.025	< 1	0.010	< 0.01	< 0.005	< 0.05			
Paguate Reservoir	10/04/79	0.013	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	< 0.01	0.002	< 1	0.020	< 0.01	< 0.005	< 0.05			
Jackpile #4	10/04/79	0.004	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	0.01	0.014	< 1	0.008	< 0.01	< 0.005	< 0.05			
Jackpile New Shop	10/04/79	0.005	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	< 0.01	0.003	< 1	0.019	< 0.01	< 0.005	< 0.05			
Jackpile Old Shop	10/04/79	0.008	< 0.05	< 0.001	< 0.005	< 0.01	< 0.0005	0.10	0.021	< 1	0.074	< 0.01	< 0.005	< 0.05			

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JACKPILE  
WATER CHEMICAL ANALYSIS

DATE: November, 1979

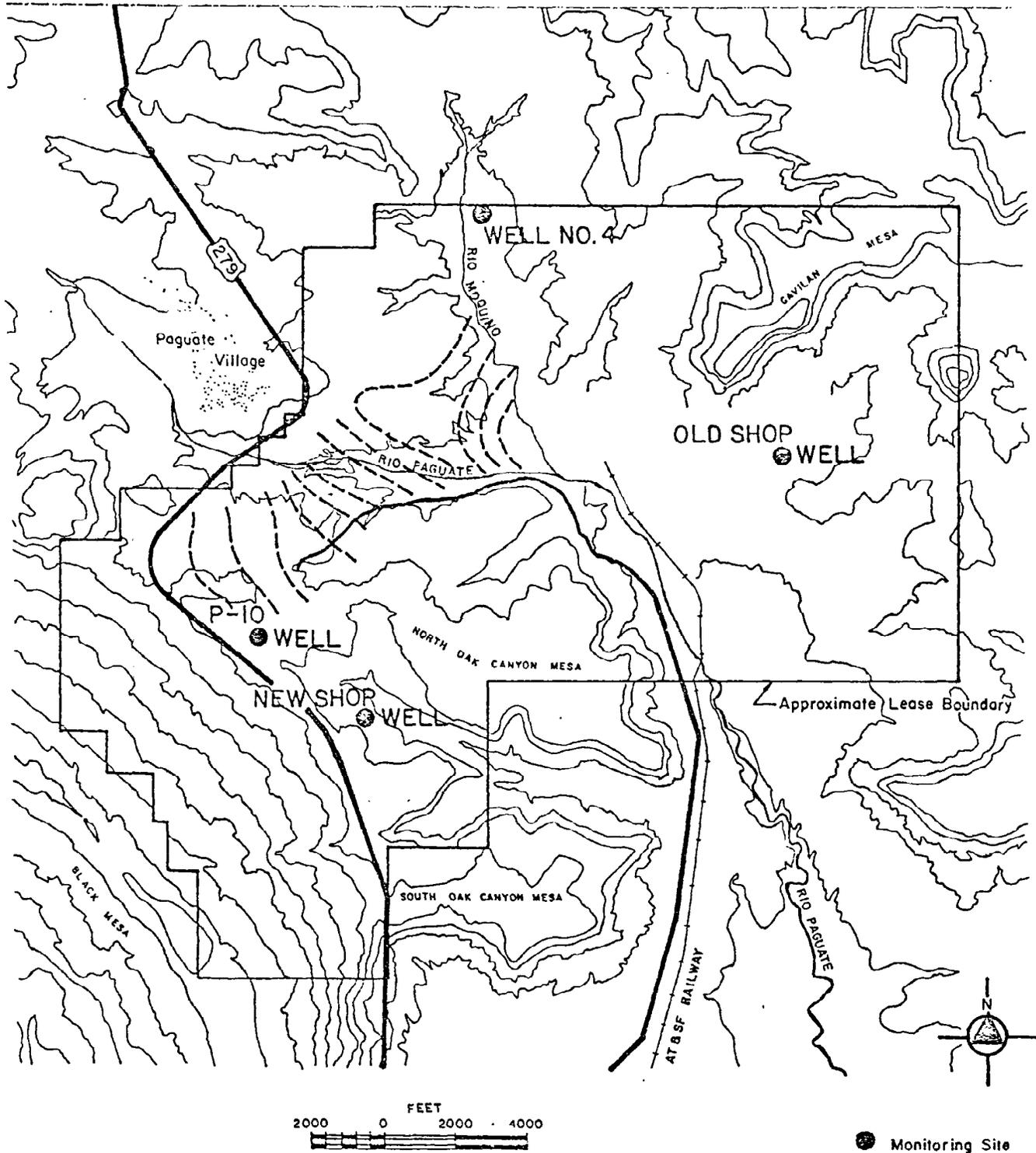
DESCRIPTIVE LOCATION	DATE	pH	TDS ppm	Cond umhos	HCO <sub>3</sub> <sup>-</sup> ppm	Cl <sup>-</sup> ppm	SO <sub>4</sub> <sup>-</sup> ppm	Na <sup>+</sup> ppm	K <sup>+</sup> ppm	Ca <sup>++</sup> ppm	Mg <sup>++</sup> ppm	NO <sub>3</sub> <sup>-</sup> ppm	F <sup>-</sup> ppm	SiO <sub>2</sub> ppm	Mn <sup>++</sup> ppm		
Rio Paguate (Upstream)	11/06/79	8.2	534	830	376	12	127	31	15	93	32	1	0.48	38	< .10		
Rio Moquino (Upstream)	11/06/79	8.0	1476	2050	259	17	883	160	19	140	101	< 1	0.71	28	< .10		
Rio Paguate (Above the Confluence)	11/06/79	8.2	605	1025	298	16	216	46	16	72	44	< 1	0.54	47	< .10		
Rio Moquino (Above the Confluence)	11/06/79	8.1	1942	2500	276	20	1231	201	20	175	140	< 1	0.94	17	< .10		
Rio Paguate (Ford Crossing)	11/06/79	8.1	1874	2250	307	21	1150	199	21	162	140	< 1	0.88	28	< .10		
Paguate Reservoir	11/06/79	8.0	2423	3000	168	44	1582	269	35	235	152	3	1.00	19	< .10		
Jackpile #4	11/06/79	8.6	866	1500	355	20	335	302	6	5	1	< 1	1.50	21	< .10		
Jackpile New Shop	11/21/79	8.3	1433	2200	389	26	665	500	10	16	1	< 1	1.55	22	< .10		
Jackpile Old Shop	11/06/79	8.3	1408	2100	337	22	728	382	11	52	29	4	1.45	13	< .10		
		As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm			
Rio Paguate (Upstream)	11/06/79	0.007	<0.05	<0.001	<0.005	0.01	<0.0005	<0.01	0.007	<.10	0.004	<0.01	<0.005	<0.05			
Rio Moquino (Upstream)	11/06/79	<0.005	<0.05	<0.001	<0.005	0.01	<0.0005	<0.01	0.008	<.10	0.004	<0.01	<0.005	<0.05			
Rio Paguate (Above the Confluence)	11/06/79	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.01	0.006	<.10	0.007	<0.01	<0.005	<0.05			
Rio Moquino (Above the Confluence)	11/06/79	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.01	0.007	<.10	0.005	<0.01	<0.005	<0.05			
Rio Paguate (Ford Crossing)	11/06/79	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.01	0.004	<.10	0.005	<0.01	<0.005	<0.05			
Paguate Reservoir	11/06/79	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.01	0.006	<.10	0.005	<0.01	<0.005	<0.05			
Jackpile #4	11/06/79	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.01	0.004	<.10	0.008	<0.01	<0.005	<0.05			
Jackpile New Shop	11/21/79	<0.005	<0.05	<0.001	<0.005	0.02	<0.0005	<0.01	0.008	<.10	0.21	<0.01	<0.005	<0.05			
Jackpile Old Shop	11/06/79	0.006	<0.05	<0.001	<0.005	0.02	<0.0005	0.19	0.020	<.10	0.070	<0.01	<0.005	<0.05			

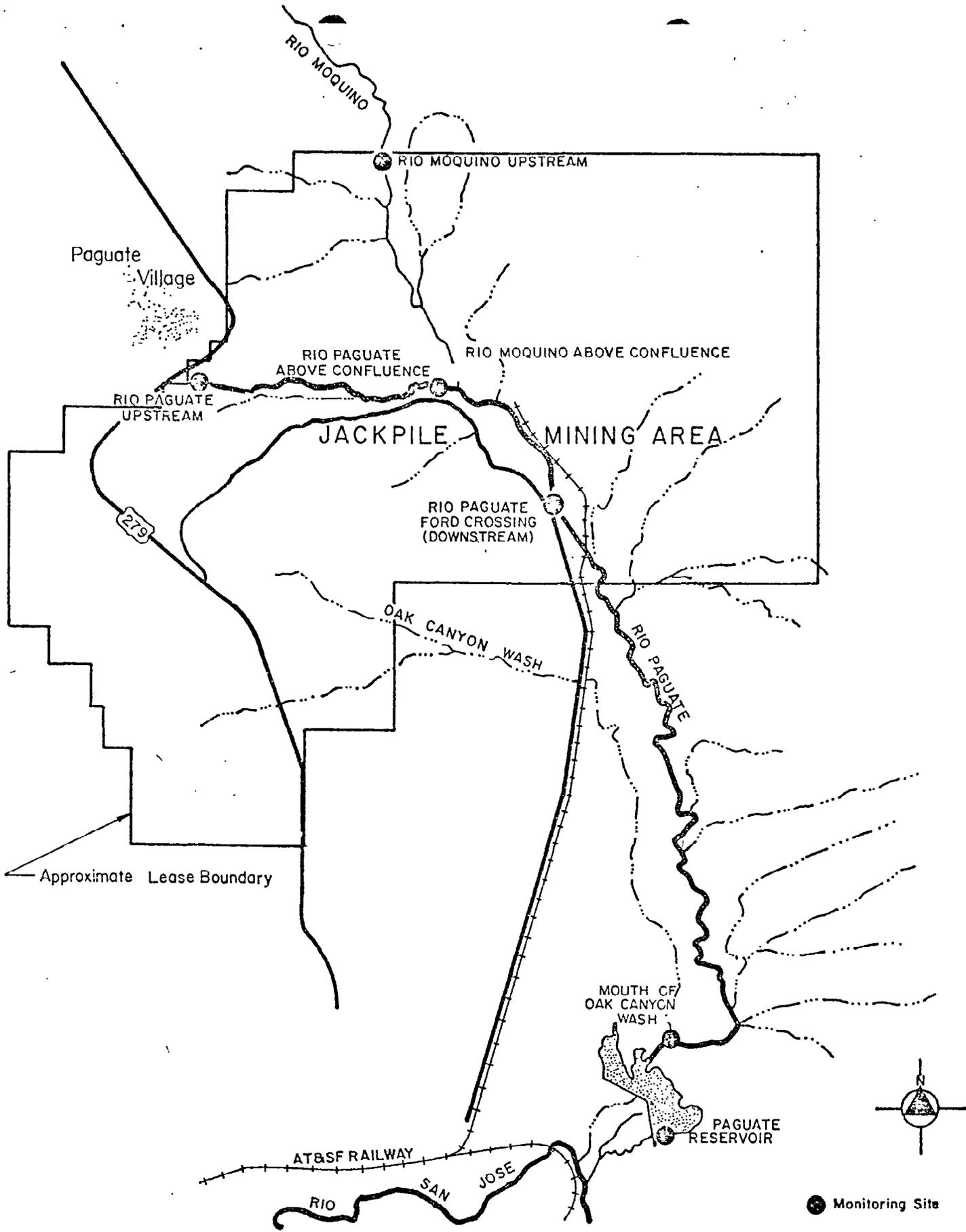
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POL-EPA01-0005183



# LOCATION OF GROUND WATER MONITORING STATIONS





LOCATION OF SURFACE WATER MONITORING STATIONS

JACKPILE - AIR SAMPLING SURVEY

SECOND QUARTER, 1980

<u>LOCATION</u>	<u>DATE</u>	Total Particulate	U-Nat.	Ra-226	Th-230	Pb-210
		<u>mg/M<sup>3</sup> x 10<sup>-8</sup></u>	<u>uci/ml x 10<sup>-15</sup></u>	<u>uci/ml x 10<sup>-15</sup></u>	<u>uci/ml x 10<sup>-15</sup></u>	<u>uci/ml x 10<sup>-15</sup></u>
1. Dump F	4/80	9.09	6.54	6.41	4.26	23.63
	5/80	4.82	14.23	6.29	2.63	21.13
	6/80	9.83	21.89	1.85	0.94	14.86
2. Mine Vent	4/80	0.38	0.26	0.20	0.48	20.20
	5/80	2.17	7.63	1.08	0.62	17.01
	6/80	NS	NS	NS	NS	NS
3. West Gate	4/80	3.57	2.63	1.45	1.81	11.84
	5/80	3.21	7.22	2.58	0.91	15.78
	6/80	10.12	11.35	4.06	1.43	11.27
4. Well #4	4/80	4.07	3.79	2.13	2.13	20.85
	5/80	2.46	0.70	0.59	2.22	20.54
	6/80	6.39	17.75	10.82	6.84	5.10

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JACKPILE - AMBIENT RADON STUDY

SECOND QUARTER, 1980

<u>LOCATION</u>	<u>DATE</u>	<u>Rn-222 pCi/l</u>
1. Dump F	4/80	0.33
	5/80	0.77
	6/80	0.92
2. Mine Vent	4/80	0.33
	5/80	0.63
	6/80	0.95
3. Well #4	4/80	0.96
	5/80	0.54
	6/80	0.85
4. Westgate	4/80	0.20
	5/80	0.76
	6/80	0.61

# LOCATION OF AIR QUALITY MONITORING STATIONS

